Remarks

Claims 1-18, and 20 are pending in this application.

Claim Rejections - 35 USC § 103

The Patent Office rejected Claims 1-18, and 20 under 35 U.S.C. 103(a) as being unpatentable over Salinger, U.S. Patent No. 6,252,912 (Salinger) in view of Wessel et al., U.S. Patent No. 6,275,685 (Wessel).

In response, Applicant respectfully asserts herein that, under the MPEP and legal standards for patentability as set forth below, the art of record does not establish a prima facie case of the unpatentability of Applicant's claims at issue. Specifically, Applicant respectfully shows below that the art of record does not recite the text of Applicant's claims at issue, and hence fails to establish a prima facie case of unpatentability. Accordingly, Applicant respectfully requests that the Examiner withdraw her rejections and hold all claims to be allowable over the art of record.

"[T]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness."[1] *MPEP* § 2142. The MPEP indicates that in order for an examiner to establish a *prima facie* case that an invention, as defined by a claim at issue, is obvious, the examiner must (1) interpret the claim at issue; (2) define one or more prior art reference components relevant to the claim at issue; (3) ascertain the differences between the one or more prior art reference components and the elements of the claim at issue; and (4) adduce objective evidence which establishes, under a preponderance of the evidence standard, a teaching to modify the teachings of the prior art reference components such that the prior art reference components can be used to

1 An invention, as embodied in the claims, is rendered obvious if an examiner concludes that although the claimed invention is not identically disclosed or described in a reference, the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *MPEP* § 2141 (citing 35 U.S.C. § 103).

construct a device substantially equivalent to the claim at issue. This last step generally encompasses two sub-steps: (1) adducement of objective evidence teaching how to modify the prior art components to achieve the individual elements of the claim at issue; and (2) adducement of objective evidence teaching how to combine the modified individual components such that the claim at issue, as a whole, is achieved. *MPEP* § 2141; *MPEP* § 2143. Each of these forgoing elements is further defined within the MPEP. *Id.*

This requirement has been explained recently by the Supreme Court in *KSR v. Teleflex, 550 U.S. _____; 127 S. Ct. 1727 (2007)* which noted that such a rejection requires "some articulated reasoning ... to support the legal conclusion of obviousness." As stated by the Court, obviousness can be established where "there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, ***this analysis should be made explicit***." (*emphasis added*) See In re Kahn, 441 F. 3d 977, 988 (CA Fed. 2006) ('[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.')." *KSR v. Teleflex, 550 U.S. _____; 127 S. Ct. 1727 at 1741.*

As further described by the Court ***"[A] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.*** Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." *KSR v. Teleflex, 550 U.S. _____; 127 S. Ct. 1727 at 1741.*

Applicant respectfully asserts that the Examiner has not established a *prima facie* case of obviousness for at least Independent Claim 1. Specifically, no where in either Salinger or Wessel is the text of Independent Claim 1 recited. Independent Claim 1 recites: "A quadrature modulator compensation system for compensating the transmission of a source signal provided by a signal source data generator, the quadrature modulator compensation system comprising: a transmitter which translates a baseband transmitter input signal to a local oscillator frequency to generate a transmitter output signal; <u>calibration circuitry coupled to the transmitter suitable for ***sequentially*** generating at least two of a phase error estimate, a gain error estimate, and a dc offset estimate</u>; and predistortion circuitry coupled to the signal source, the transmitter and the calibration circuitry, the predistortion circuitry receiving the source signal and the phase error estimate of the transmitter as inputs and providing as an output the transmitter input signal as a function of the phase error estimate of the transmitter."

With respect to Independent Claim 1, Examiner has stated: "Salinger discloses: a transmitter which translates a baseband transmitter input signal to a local oscillator frequency to generate a transmitter output signal (col. 7, lines 7-10, col. 15, lines 30-31, discloses the modulator 12 of fig. 1 modulates the signal with a local oscillator, col. 5, lines 52-54, Salinger teaches that the modulation translates a baseband signal to a oscillator frequency); calibration circuitry coupled to the transmitter (fig. 1 elements 26-28 and col.) suitable sequentially generating a gain imbalances (see col.7, lines 540-65); predistortion circuitry coupled to the signal source, the transmitter and the calibration circuitry, the predistortion circuitry receiving the source signal (fig. 1, 14, 20) and the phase error estimate of the transmitter as inputs and providing as an output the transmitter input signal as a function of the phase error estimate of the transmitter (col. 15, lines 35-54, fig. 1, output of 22). However, Salinger does not teach a calibration circuitry for generating at least two of a phase error estimate and gain error estimate. Wessel et al teaches a detector is functionally equivalent to the claimed (calibration circuitry) for generating at least two of a

phase error estimate and gain error estimate (see figs 4-7 elements 60, 82, 84 and col.7, lines 7-65." *See Examiner's Office Action*, pp. 2-3 (26 September 2007). Applicant respectfully disagrees and traverses the rejection.

Applicant respectfully points out that Applicant has read the portions of Wessel identified by Examiner, and, so far as Applicant can discern, Wessel does not recite the text of Applicant's Independent Claim 1. Rather, the portion of Wessel cited by Examiner recites as follows:

> That is, <u>the pre-distorter (70) ***adaptively adjusts*** its gain and phase transfer functions **in response to** residual gain error (82) and residual phase error (84) signals fed back from an error detection subsystem (60).</u> The pre-distortion functions therefore optimally converge as the system operates.
>
> FIG. 5 shows an implementation of error detection subsystem (60) as may be used in the above described amplifier. The input signals (42) and (54) are each split by power splitters (602) and (604) respectively. An output of splitter (602) is fed to envelope detector (610) and an output of splitter (604) is fed to envelope detector (612). The envelope detectors (610, 612) produce output voltages proportional to the amplitude envelope of signals (42) and (54) respectively. The output voltage of detector (610) is subtracted from the output of detector (612) by a differential amplifier (616) to produce a signal (618) proportional to the amplitude error between (42) and (54). The difference signal (618) is divided in analogue divider block (620) by signal (614) being the output of envelope detector (610) to produce a signal (82) which is proportional to the gain error between (42) and (54). The implication of this is that the gain error signal (82) is a metric (only of the gain distortion (amplitude compression or expansion) in the power amplifier and is independent of the input signal envelope level. This can improve the stability of the amplitude adaptation loop allowing parameter .mu..sub.g to be set more closely for rapid conversions.
>
> The remaining outputs of splitters (602) and (604) are fed. to a phase comparator (630) which has two outputs (632) and (634). If the RF input from splitter (602) is represented in polar form by R.sub.1.cos(.omega..sub.c t+.alpha.) and the RF input from splitter (604) is represented by R.sub.2.cos(.omega..sub.c t +.beta.) then the response of phase comparator (630) is such that output (632) is proportional to R.sub.1.R.sub.2.cos(.beta.-.alpha.) and output (634) is proportional to R.sub.1.R.sub.2.sin(.beta.-.alpha.). Analogue divider block (636) divides output (634) by (632) to give phase error signal (84): it should be noted that this divider is merely correcting

> for the amplitude response of the differential phase detector and hence performs a different role to that (620) in the gain error loop. Phase error signal (84) is then equal to tan(.beta.-.alpha.) which for (.beta.-.alpha.) small is approximately proportional to (.beta.-.alpha.).
>
> Variations of the error detector (60) are possible. Depending on the performance required, the amplitude analogue divider (620) may be omitted (although .mu..sub.g will need to be set to a lower value in order to preserve a loop stability), an alternative configuration of amplitude detectors and signal processing elements may be used. Alternative types of phase discriminator may also be used. A variation of the error detector (60) may be implemented which generates error signals (82, 84) relating to the signs of the amplitude and phase errors only, as are commonly employed elsewhere in the field of control systems.
>
> The error detection block (60) may be partially or entirely replaced by digital implementation, wherein the RF signals (42, 54) are digitised and the error signals (82, 84) are computed by digital signal processing means (DSP). The feeding of these .error signals to gain blocks (724, 754) into the predistorter (70) can then be performed in the digital domain.

See Detailed Description Wessel, Col. 7, Lines 7-65 (emphasis added).

As can be seen from the foregoing, Examiner-identified portions of Wessel do *not recite* the text recited in Independent Claim 1. Specifically, the cited text of Wessel does not recite "calibration circuitry coupled to the transmitter suitable for ***sequentially*** generating at least two of a phase error estimate, a gain error estimate, and a dc offset estimate." Rather, Wesel recites "the pre-distorter (70) ***adaptively adjusts*** its gain and phase transfer functions **in response to** residual gain error (82) and residual phase error (84) signals fed back from an error detection subsystem (60)."

Applicant has reviewed the Examiner-cited portions of Wessel and is unable to locate a recitation of the clauses of Claim 1. Applicant further respectfully points out that the Examiner has provided no evidence or reason as to why the text of the reference passage should be interpreted to teach the clauses of Independent Claim 1 as the Examiner alleges.

Given that Applicant has shown, above, what Wessel actually recites, the question thus naturally arises as to how Examiner saw Wessel as teaching the clauses of Independent Claim 1.

Applicant respectfully points out that the Applicant's Application is the only one objective examiner-cited document of record that shows or suggests what Examiner purports the reference to teach. From this and Wessel's express recitations (see above), it follows that Examiner is interpreting Wessel through the lens of Applicant's application, which is impermissible hindsight use. Thus, at present, Examiner's assertions regarding Wessel are untenable.
Accordingly, under the MPEP standards as set forth above, the Examiner has not established a *prima facie* case that art of record anticipates Independent Claim 1. Applicant respectfully asks Examiner to hold Independent Claim 1 allowable and to issue a Notice of Allowance of same.

Claims 2-9 depend either directly or indirectly from Independent Claim 1 or are independently patentable. "A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." See 35 U.S.C. § 112 paragraph 4. Consequently, Dependent Claims 2-14 are patentable for at least the reasons why Independent Claim 1 is patentable. Accordingly, Applicant respectfully requests that Examiner hold Dependent Claims 2-14 patentable for at least the foregoing reasons, and issue a Notice of Allowance on same.

Applicant also respectfully asserts that the Examiner has not established a *prima facie* case of obviousness for at least Independent Claim 10. Specifically, no where in either Salinger or Wessel is the text of Independent Claim 10 recited. Independent Claim 10 recites: "A method of compensating transmission of a source signal in a quadrature modulator, the method comprising: calculating an actual transmitter envelope; calculating a desired transmitter envelope; determining a phase error estimate of the transmitter as a function of an angle of intersection between the desired transmitter envelope and the actual transmitter envelope; predistorting the source signal to generate a transmitter input signal,

wherein the transmitter input signal is generated as a function of the source signal and the determined phase error estimate; generating a gain error estimate of the transmitter; estimating a dc offset; and generating a transmitter output signal as a function of the transmitter input signal, wherein at least two of the phase error estimate, the gain error estimate, and the dc offset estimate are sequentially generated."

With respect to Independent Claim 10, Examiner has stated: "Salinger discloses: a transmitter which translates a baseband transmitter input signal to a local oscillator frequency to generate a transmitter output signal (col. 7, lines 7-10, col. 15, lines 30-31, discloses the modulator 12 of fig. 1 modulates the signal with a local oscillator, col. 5, lines 52-54, Salinger teaches that the modulation translates a baseband signal to a oscillator frequency); calibration circuitry coupled to the transmitter (fig. 1 elements 26-28 and col.) suitable sequentially generating a gain imbalances (see col.7, lines 540-65); predistortion circuitry coupled to the signal source, the transmitter and the calibration circuitry, the predistortion circuitry receiving the source signal (fig. 1, 14, 20) and the phase error estimate of the transmitter as inputs and providing as an output the transmitter input signal as a function of the phase error estimate of the transmitter (col. 15, lines 35-54, fig. 1, output of 22). However, Salinger does not teach a calibration circuitry for generating at least two of a phase error estimate and gain error estimate. Wessel et al teaches a detector is functionally equivalent to the claimed (calibration circuitry) for generating at least two of a phase error estimate and gain error estimate (see figs 4-7 elements 60, 82, 84 and col.7, lines 7-65." *See Examiner's Office Action*, pp. 2-3 (26 September 2007). Applicant respectfully disagrees and traverses the rejection. Applicant respectfully disagrees and traverses the rejection.

Applicant respectfully points out that Applicant has read the portions of Wessel identified by Examiner, and, so far as Applicant can discern, Wessel does not recite the text of Applicant's Independent Claim 10. Rather, the portion of Wessel cited by Examiner recites as follows:

That is, the pre-distorter (70) ***adaptively adjusts*** its gain and phase transfer functions **in response to** residual gain error (82) and residual phase error (84) signals fed back from an error detection subsystem (60). The pre-distortion functions therefore optimally converge as the system operates.
FIG. 5 shows an implementation of error detection subsystem (60) as may be used in the above described amplifier. The input signals (42) and (54) are each split by power splitters (602) and (604) respectively. An output of splitter (602) is fed to envelope detector (610) and an output of splitter (604) is fed to envelope detector (612). The envelope detectors (610, 612) produce output voltages proportional to the amplitude envelope of signals (42) and (54) respectively. The output voltage of detector (610) is subtracted from the output of detector (612) by a differential amplifier (616) to produce a signal (618) proportional to the amplitude error between (42) and (54). The difference signal (618) is divided in analogue divider block (620) by signal (614) being the output of envelope detector (610) to produce a signal (82) which is proportional to the gain error between (42) and (54). The implication of this is that the gain error signal (82) is a metric (only of the gain distortion (amplitude compression or expansion) in the power amplifier and is independent of the input signal envelope level. This can improve the stability of the amplitude adaptation loop allowing parameter .mu..sub.g to be set more closely for rapid conversions.

The remaining outputs of splitters (602) and (604) are fed. to a phase comparator (630) which has two outputs (632) and (634). If the RF input from splitter (602) is represented in polar form by R.sub.1.cos(.omega..sub.c t+.alpha.) and the RF input from splitter (604) is represented by R.sub.2.cos(.omega..sub.c t +.beta.) then the response of phase comparator (630) is such that output (632) is proportional to R.sub.1.R.sub.2.cos(.beta.-.alpha.) and output (634) is proportional to R.sub.1.R.sub.2.sin(.beta.-.alpha.). Analogue divider block (636) divides output (634) by (632) to give phase error signal (84): it should be noted that this divider is merely correcting for the amplitude response of the differential phase detector and hence performs a different role to that (620) in the gain error loop. Phase error signal (84) is then equal to tan(.beta.-.alpha.) which for (.beta.-.alpha.) small is approximately proportional to (.beta.-.alpha.).

Variations of the error detector (60) are possible. Depending on the performance required, the amplitude analogue divider (620) may be omitted (although .mu..sub.g will need to be set to a lower value in order to preserve a loop stability), an alternative configuration of amplitude detectors and signal processing elements may be used.

> Alternative types of phase discriminator may also be used. A variation of the error detector (60) may be implemented which generates error signals (82, 84) relating to the signs of the amplitude and phase errors only, as are commonly employed elsewhere in the field of control systems.
> The error detection block (60) may be partially or entirely replaced by digital implementation, wherein the RF signals (42, 54) are digitised and the error signals (82, 84) are computed by digital signal processing means (DSP). The feeding of these .error signals to gain blocks (724, 754) into the predistorter (70) can then be performed in the digital domain.

See Detailed Description Wessel, Col. 7, Lines 7-65 (emphasis added).

As can be seen from the foregoing, the Examiner identified portions of Wessel do *not recite* the text recited in Independent Claim 10. Specifically, the cited text of Wessel does not recite "wherein **at least two of the phase error estimate, the gain error estimate, and the dc offset** estimate ***are sequentially generated***." Rather, Wesel recites "the pre-distorter (70) ***adaptively adjusts*** its gain and phase transfer functions **in response to** residual gain error (82) and residual phase error (84) signals fed back from an error detection subsystem (60)."

Applicant has read the Examiner cited portions of Wessel is unable to locate a recitation of the clauses of Claim 10. Applicant further respectfully points out that the Examiner has provided no evidence or reason as to why the text of the reference passage should be interpreted to teach the recitations of Independent Claim 10, as the Examiner alleges.

Given that Applicant has shown, above, what Wessel actually recites, the question thus naturally arises as to how Examiner saw Wessel as teaching the clauses of Independent Claim 10.

Applicant respectfully points out that the Applicant's Application is the only one objective examiner-cited document of record that shows or suggests what Examiner purports the reference to teach. From this and Wessel's express recitations (see above), it follows that Examiner is interpreting Wessel through the lens of Applicant's application, which is impermissible hindsight use. Thus, at present, Examiner's assertions regarding Wessel are untenable.

Accordingly, under the MPEP standards as set forth above, the Examiner has not established a *prima facie* case that art of record anticipates Independent Claim 10. Applicant respectfully asks Examiner to hold Independent Claim 10 allowable and to issue a Notice of Allowance of same.

Claims 11-14 depend either directly or indirectly from Independent Claim 10 or are independently patentable. "A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." See 35 U.S.C. § 112 paragraph 4. Consequently, Dependent Claims 11-14 are patentable for at least the reasons why Independent Claim 10 is patentable. Accordingly, Applicant respectfully requests that Examiner hold Dependent Claims 11-14 patentable for at least the foregoing reasons, and issue a Notice of Allowance on same.

Applicant further respectfully asserts that the Examiner has not established a *prima facie* case of obviousness for at least Independent Claim 15. Specifically, no where in either Salinger or Wessel is the text of Independent Claim 15 recited. Independent Claim 15 recites: "A quadrature modulator compensation system for compensating the transmission of a source signal provided by a signal source data generator, the quadrature modulator compensation system comprising: a transmitter which translates a baseband transmitter input signal to a local oscillator frequency to generate a transmitter output signal; calibration circuitry coupled to the transmitter and configured to generate at least one of: a phase error estimate of the transmitter as a function of an angle of intersection between a desired transmitter envelope and an actual transmitter envelope, a gain error estimate of the transmitter as a function of variation in the actual transmitter envelope, and a dc offset estimate in an in-phase component and a quadrature component of the source signal as a function of a centroid of the actual transmitter envelope; and predistortion circuitry coupled to the signal source, the transmitter and the calibration circuitry, the predistortion circuitry receiving the source signal and at least one of the phase error estimate, the gain error estimate, and the dc offset estimate as inputs and

providing as an output the transmitter input signal as a function of at least one of the phase error estimate, the gain error estimate, and the dc offset estimate, wherein the calibration circuitry sequentially generates at least two of the phase error estimate, the gain error estimate, and the dc offset estimate."

With respect to Independent Claim 15, Examiner has stated: "Salinger discloses: a transmitter which translates a baseband transmitter input signal to a local oscillator frequency to generate a transmitter output signal (col. 7, lines 7-10, col. 15, lines 30-31, discloses the modulator 12 of fig. 1 modulates the signal with a local oscillator, col. 5, lines 52-54, Salinger teaches that the modulation translates a baseband signal to a oscillator frequency); calibration circuitry coupled to the transmitter (fig. 1 shows predistortion circuitry coupled to modulator 12) and generating a phase error estimate of the transmitter as a function of an angle of intersection between a desired transmitter envelope and an actual transmitter envelope (col.12, lines 41-59); a gain error estimate of the transmitter as a function of the variation in the actual transmitter envelope (col. 5, lines 4-7), and a dc offset estimate in an in-phase component and a quadtrature component of the source signal as a function of a centroid of the actual transmitter envelope (col. 12, lines 41-59); predistortion circuitry coupled to the signal source, the transmitter and the calibration circuitry, (fig. 1, 14, 20) the predistortion circuitry receiving the source signal and at least one of the phase error estimate, the gain error estimate, and the dc offset estimate (col. 15, lines 35-54, fig. 1, output of 22). However, Salinger does not teach a calibration circuitry for generating at least two of a phase error estimate and gain error estimate. Wessel et al teaches a detector is functionally equivalent to the claimed (calibration circuitry) for generating at least two of a phase error estimate and gain error estimate (see figs 4-7 elements 60, 82, 84 and col.7, lines 7-65." *See Examiner's Office Action*, pp. 4-5 (26 September 2007). Applicant respectfully disagrees and traverses the rejection.

Applicant respectfully points out that Applicant has read the portions of Wessel identified by Examiner, and, so far as Applicant can discern, Wessel

does not recite the text of Applicant's Independent Claim 15. Rather, the portion of Wessel cited by Examiner recites as follows:

> That is, the pre-distorter (70) ***adaptively adjusts*** its gain and phase transfer functions **in response to** residual gain error (82) and residual phase error (84) signals fed back from an error detection subsystem (60). The pre-distortion functions therefore optimally converge as the system operates.
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> FIG. 5 shows an implementation of error detection subsystem (60) as may be used in the above described amplifier. The input signals (42) and (54) are each split by power splitters (602) and (604) respectively. An output of splitter (602) is fed to envelope detector (610) and an output of splitter (604) is fed to envelope detector (612). The envelope detectors (610, 612) produce output voltages proportional to the amplitude envelope of signals (42) and (54) respectively. The output voltage of detector (610) is subtracted from the output of detector (612) by a differential amplifier (616) to produce a signal (618) proportional to the amplitude error between (42) and (54). The difference signal (618) is divided in analogue divider block (620) by signal (614) being the output of envelope detector (610) to produce a signal (82) which is proportional to the gain error between (42) and (54). The implication of this is that the gain error signal (82) is a metric (only of the gain distortion (amplitude compression or expansion) in the power amplifier and is independent of the input signal envelope level. This can improve the stability of the amplitude adaptation loop allowing parameter .mu..sub.g to be set more closely for rapid conversions.
>
> The remaining outputs of splitters (602) and (604) are fed. to a phase comparator (630) which has two outputs (632) and (634). If the RF input from splitter (602) is represented in polar form by R.sub.1.cos(.omega..sub.c t+.alpha.) and the RF input from splitter (604) is represented by R.sub.2.cos(.omega..sub.c t +.beta.) then the response of phase comparator (630) is such that output (632) is proportional to R.sub.1.R.sub.2.cos(.beta.-.alpha.) and output (634) is proportional to R.sub.1.R.sub.2.sin(.beta.-.alpha.). Analogue divider block (636) divides output (634) by (632) to give phase error signal (84): it should be noted that this divider is merely correcting for the amplitude response of the differential phase detector and hence performs a different role to that (620) in the gain error loop. Phase error signal (84) is then equal to tan(.beta.-.alpha.) which for (.beta.-.alpha.) small is approximately proportional to (.beta.-.alpha.).
>
> Variations of the error detector (60) are possible. Depending on the

> performance required, the amplitude analogue divider (620) may be omitted (although .mu..sub.g will need to be set to a lower value in order to preserve a loop stability), an alternative configuration of amplitude detectors and signal processing elements may be used. Alternative types of phase discriminator may also be used. A variation of the error detector (60) may be implemented which generates error signals (82, 84) relating to the signs of the amplitude and phase errors only, as are commonly employed elsewhere in the field of control systems.
>
> The error detection block (60) may be partially or entirely replaced by digital implementation, wherein the RF signals (42, 54) are digitised and the error signals (82, 84) are computed by digital signal processing means (DSP). The feeding of these .error signals to gain blocks (724, 754) into the predistorter (70) can then be performed in the digital domain.

See Detailed Description Wessel, Col. 7, Lines 7-65 (emphasis added).

As can be seen from the foregoing, the Examiner identified portions of Wessel do ***not recite*** the text recited in Independent Claim 15. Specifically, the cited text of Wessel does not recite "wherein the calibration circuitry ***sequentially generates*** at least two of the phase error estimate, the gain error estimate, and the dc offset estimate." Rather, Wessel recites "the pre-distorter (70) ***adaptively adjusts*** its gain and phase transfer functions **in response to** residual gain error (82) and residual phase error (84) signals fed back from an error detection subsystem (60)."

Applicant has read the Examiner cited portions of Wessel is unable to locate a recitation of the clauses of Claim 15. Applicant further respectfully points out that the Examiner has provided no evidence or reason as to why the text of the reference passage should be interpreted to teach the recitations of Independent Claim 15, as the Examiner alleges.

Given that Applicant has shown, above, what Wessel actually recites, the question thus naturally arises as to how Examiner saw Wessel as teaching the clauses of Independent Claim 15.

Applicant respectfully points out that the Applicant's Application is the only one objective examiner-cited document of record that shows or suggests what

Examiner purports the reference to teach. From this and Wessel's express recitations (see above), it follows that Examiner is interpreting Wessel through the lens of Applicant's application, which is impermissible hindsight use. Thus, at present, Examiner's assertions regarding Wessel are untenable.

Accordingly, under the MPEP standards as set forth above, the Examiner has not established a *prima facie* case that art of record anticipates Independent Claim 15. Applicant respectfully asks Examiner to hold Independent Claim 15 allowable and to issue a Notice of Allowance of same.

Claims 16 -18 and 20 depend either directly or indirectly from Independent Claim 15 or are independently patentable. "A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." See 35 U.S.C. § 112 paragraph 4. Consequently, Dependent Claims 16-18 and 20 are patentable for at least the reasons why Independent Claim 15 is patentable. Accordingly, Applicant respectfully requests that Examiner hold Dependent Claims 16 -18 and 20 patentable for at least the foregoing reasons, and issue a Notice of Allowance on same.

Conclusion

The application is respectfully submitted to be in condition for allowance. Accordingly, notification to that effect is earnestly solicited. In the event that issues arise in the application that may readily be resolved via telephone, the Examiner is kindly invited to contact the undersigned Attorney to facilitate prosecution of the application.

Respectfully submitted,
ROCKWELL COLLINS, INC.

Dated: 1/28/08 By: Kyle Eppele

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